

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	East- ern stand- ard time	Heliographic			Area		Total area for each day	Observatory
		Diff. in longi- tude	Longi- tude	Lat- tude	Spot	Group		
1936 Aug. 24	h. m. 11 34	° -70.0 -62.0 -59.0 -51.0 -29.0 +21.0 +39.5 +70.0	° 87.6 75.6 78.6 86.6 108.6 158.6 177.1 207.6	° -23.0 -22.0 +30.0 +27.0 -10.0 +29.0 +30.5 +20.0	15 62 46 62 46 77 31			U. S. Naval.
Aug. 25	11 27	° -68.0 -49.0 -39.0 -11.0 +34.0 +50.5 +78.0	° 56.4 75.4 85.4 113.4 158.4 174.9 202.4	° -27.0 -23.0 +27.0 -10.0 +29.0 +30.5 +14.0		216 77 31 31 93 81 216	401	Do.
Aug. 26	14 37	° -53.0 -33.0 -25.0 -5.0 +3.0 +49.0 +65.0	° 56.5 76.5 84.5 104.5 112.5 158.5 174.5	° -27.0 -23.0 +27.0 -17.0 -9.0 +29.5 +30.0	93 93 31 123 31 46 62		510	Do.
Aug. 27	11 10	° -62.0 -40.0 -22.0 -13.0 +7.0 +11.0 +16.0 +75.0	° 36.1 58.1 76.1 85.1 105.1 109.1 114.1 173.1	° +17.0 -28.0 -21.0 +28.0 -17.0 -11.0 -8.0 +32.0	134 48 213 2 77 87 8		602	Mount Wilson.
Aug. 28	12 35	° -47.0 -25.0 -7.0 -2.0 +6.0 +23.0 +27.0 +30.0	° 37.2 59.2 77.2 82.2 90.2 107.2 111.2 114.2	° +15.0 -27.0 -23.0 +27.0 -10.0 -19.0 -11.0 -7.0	107 17 6 191 2 30		1,006	Do.
Aug. 29	12 45	° -37.0 -15.0 +5.0 +12.0 +20.0 +37.0 +44.0 +50.0	° 33.9 55.9 75.9 82.9 90.9 107.9 114.9 120.9	° +18.0 -27.0 -22.0 +28.0 -11.0 -17.0 -8.0 -22.0	106 1,036 88 18 10 144 28 10		1,076	Do.
Aug. 30	12 7	° -23.0 -3.0 +18.0 +26.0 +34.0 +50.0 +53.0	° 35.0 55.0 76.0 84.0 92.0 108.0 111.0	° +18.0 -27.0 -22.0 +27.0 -10.5 -17.0 -10.0	31 679 15 46 93 31		1,440	U. S. Naval.
Aug. 31	11 26	° -9.0 +10.0 +30.5 +47.0 +61.0 +66.0	° 33.2 55.2 75.7 92.2 106.2 111.2	° +14.0 +18.0 -27.0 -33.0 -12.0 -17.5 -10.0	15 31 617 31 123 15 15		926	Do.

Mean daily area for 31 days, 691.

PROVISIONAL SUN-SPOT RELATIVE NUMBERS,
JULY 1936[Data dependent alone on observations at Zurich and its station at Arosa]
[Furnished through the courtesy of Prof. W. Brunner, Eidgen. Sternwarte, Zurich, Switzerland]

July 1936	Relative numbers	July 1936	Relative numbers	July 1936	Relative numbers
1-----	<i>MEcc</i> 79	11-----	<i>Ec</i> 49	21-----	28
2-----	74	12-----	67	22-----	<i>a</i> 27
3-----	44	13-----	67	23-----	<i>Mc</i> 30
4-----	50	14-----	<i>b</i> 76	24-----	36
5-----	<i>Mac</i> 52	15-----	67	25-----	42
6-----	37	16-----	<i>d</i> 69	26-----	49
7-----	30	17-----	67	27-----	38
8-----	<i>d</i> 47	18-----	53	28-----	<i>d</i> --
9-----	43	19-----	49	29-----	<i>WEcc</i> 59
10-----	47	20-----	43	30-----	61
				31-----	<i>b</i> 93

Mean, 30 days=52.4.

a = Passage of an average-sized group through the central meridian.
b = Passage of a large group or spot through the central meridian.
c = New formation of a center of activity: E, on the eastern part of the sun's disk; W, on the western part; M, in the center circle zone.
d = Entrance of a large or average-sized center of activity on the east limb.

PROVISIONAL SUN-SPOT RELATIVE NUMBERS,
AUGUST 1936[Data dependent alone on observations at Zurich and its station at Arosa]
[Furnished through the courtesy of Prof. W. Brunner, Eidgen. Sternwarte, Zurich, Switzerland]

August 1936	Relative numbers	August 1936	Relative numbers	August 1936	Relative numbers
1-----	64	11-----	<i>a</i> 83	21-----	<i>a</i> 71
2-----	<i>ab</i> 64	12-----	<i>a</i> 76	22-----	<i>Eac</i> 64
3-----	74	13-----	<i>Mc</i> 90	23-----	<i>ad</i> 64
4-----	<i>d</i> 65	14-----	103	24-----	<i>d</i> 63
5-----	<i>Mc</i> 87	15-----	<i>acd</i> 123	25-----	<i>Ec</i> 91
6-----	86	16-----	93	26-----	<i>a</i> 76
7-----	89	17-----	105	27-----	<i>a</i> 87
8-----	<i>Ec</i> 89	18-----	115	28-----	91
9-----	107	19-----	<i>a</i> 90	29-----	<i>Macd</i> 106
10-----	<i>Wac</i> 89	20-----	65	30-----	<i>b</i> 125
				31-----	120

Mean, 31 days=87.6.

a = Passage of an average-sized group through the central meridian.
b = Passage of a large group or spot through the central meridian.
c = New formation of a center of activity: E, on the eastern part of the sun's disk; W, on the western part; M, in the center circle zone.
d = Entrance of a large or average-sized center of activity on the east limb.

AEROLOGICAL OBSERVATIONS

[Aerological Division, D. M. LITTLE in charge]

By L. T. SAMUELS

Attention is invited to the note at the foot of table 1, regarding the data on which the normals are based.

The super-normal surface temperatures for August over the central portion of the country, shown on chart I of this REVIEW, extended to considerable heights (see table 1). The largest free-air temperature departures occurred over Omaha at the 1,500- and 2,000-meter levels. Above these levels the departures decreased generally with altitude, in some cases becoming negative at the more southern stations.

The free-air relative humidity departures were mostly of opposite sign to those of temperature, with the largest negative departures occurring over Omaha at the 2,000-meter level. At 5,000 meters, however, the region of maximum negative relative humidity departures was displaced to the southeastern portion of the country. From chart V (inset) in this REVIEW it is seen that the monthly precipitation was deficient over the same general region

where the greatest negative free-air relative humidity departures occurred.

Although the period of record at El Paso is only 2 years, it is evident that the average relative humidity during the warm season increases appreciably with elevation and results in higher mean relative humidity at 4,000 meters than at any other station. The relation of this condition to the general circulation and upper air pressure distribution over the United States and adjacent regions presents an interesting problem for investigation.

The resultant free-air wind direction for August was in most cases close to normal, with resultant velocities generally above normal. Principal exceptions occurred over the southeastern region where a pronounced easterly component prevailed at 3,000 and 4,000 meters as compared to the normal westerly component at those levels, and over the more eastern stations above 1,000 meters where the resultant velocities were below normal.